

1. Demographic Information

Background

The Ohio Transfer 36, Subgroup 2, Mathematics, Statistics, and Logic have been tasked with exploring the possibility of an Introduction to Logic course. This effort is rooted in a recent shift from Ohio Transfer 36 guidelines to now learning outcomes. With this shift, previous mathematics courses approved under TMSL guidelines will expire as Ohio Transfer 36 courses are up for re-review aligning to each institutions specific course review timeline. The removal of TMSL, identified a need to develop learning outcomes for formal logic courses.

Proposed Introduction to Logic (TMM027) learning outcomes has been shared with Subgroup 2, Mathematics, Statistics, and Logic panel members. TMM027 serves the following purpose:

- Acts as a general education course in formal logic. Course primarily concerned with critical thinking in general do not qualify as an introduction of logic course.
- Serves as a general education option for students interested in pursuing program majors such as philosophy, pre-law, math, computer science, and engineering.

What We Need From You:

Subgroup 2 seeks endorsement of the proposed learning outcomes for TMM027. Please review proposed learning outcomes and coordinate efforts within your institution to complete the endorsement survey to determine if your institution agrees or disagrees with proposed course learning outcomes. We are collecting only one response per institution.

Please provide your institutional response by **October 21, 2022**. The survey link is:
<https://www.surveymonkey.com/r/F8Y32J5>

Important Note: Institutions must complete the survey via the link provided above. The attached PDF file is for reference only. Do not use the PDF version to respond to the survey.

Thank you in advance for your assistance. If you have any questions, contact Faculty lead for the Ohio Transfer 36 Mathematics, Statistics, and Logic review Panel/Subgroup 2, Dr. Ricardo Moena at Ricardo.moena@uc.edu or (513) 556-4055 or Jessi Spencer Senior Director of OATN Policy, Budget, and Constituent Relations, at jspencer@highered.ohio.gov at (614) 728-4706.

*** 1. Demographic Information about the Person Completing this Survey**

Name	<input type="text"/>
Institution	<input type="text"/>
Department	<input type="text"/>
Title	<input type="text"/>
Email	<input type="text"/>
Phone	<input type="text"/>

*** 2. Please Indicate the Type of Institution that you represent**

- ☐ Two-Year Institution
- ☐ Four-Year Institution

2. Introduction to Logic (TMM027)

Suggested Number of Credit Hours: 3

This is a general education course in formal logic for students not needing a more specialized course in mathematics or for students whose major area of study benefits from the study of formal logic such as philosophy majors, pre-law majors, math majors, computer science majors, and engineering majors. This course introduces students to the study of logic in general and specifically introduces students to the formal study of deductive logic. Topics include identifying arguments and their parts, evaluating arguments for validity or strength, drawing and interpreting Venn diagrams, constructing and interpreting truth tables, formal proof rules and techniques, and defining and applying logical concepts such as consistency, logical equivalency, and so on.

To qualify for TMM027 (Introduction to Logic), a course must meet all the outcomes for the two essential topics (marked with an asterisk) and at least one set of outcomes for one of the two alternate topics. In other words, courses must not only meet all the outcomes for basic logical concepts and skills and sentential logic but also must either meet the outcomes for predicate logic or the outcomes for categorical logic. Courses primarily concerned with critical thinking in general do not qualify. At least 70% of course time should be spent on the essential and alternate topics.

Course topics fit the material in the following common logic texts:

Bergmann, Moor, and Nelson, The Logic Book, 6th Ed.

Essential: Chapters 1, 2, 3, and 5

Alternate: Chapter 10

Copi, Cohen, and Rodych, Introduction to Logic, 15th Ed.

Essential: Chapters 1, 2, 8, and 9

Alternate: Chapters 5, 6, and 7 OR Chapter 10

Hurley and Watson, A Concise Introduction to Logic, 13th Ed.

Essential: Chapters 1, 6, and 7

Alternate: Chapters 4 and 5 OR Chapter 8

1. Below are the learning outcomes for TMM027- Introduction to Logic listed individually. Do you agree with these outcomes?

Yes- should be essential
(Essential Topic)

Yes- should be non-essential
(Alternate Topic)

No

**Basic Logical Concepts
and Skills (Essential
Topic):**

**1.1 Define "statement".
Identify statements. ***

☐☐☐

**Basic Logical Concepts
and Skills (Essential
Topic):**

1.2 Define “argument” (including “premise” and “conclusion”). Identify arguments, their premises and conclusions, and write arguments in standard form. *



Basic Logical Concepts and Skills (Essential Topic):

1.3 Define “logically true” (or “tautology”), “logically false” (or “self-contradictory”), and “contingent”. Classify individual statements as logically true, false, or contingent. *



Basic Logical Concepts and Skills (Essential Topic):

1.4 Define “equivalent” and “contradictory”. Classify pairs of statements as equivalent or contradictory. *



Basic Logical Concepts and Skills (Essential Topic):

1.5 Define “consistent” and “inconsistent”. Classify sets of statements as consistent or inconsistent. *



Basic Logical Concepts and Skills (Essential Topic):

1.6 Describe the difference between deductive and inductive arguments. Classify arguments as deductive or inductive. *



Basic Logical Concepts and Skills (Essential Topic):

1.7 Define “valid” and “sound”. Evaluate arguments for validity and soundness. *



Basic Logical Concepts and Skills (Essential Topic):

1.8 Define “strong” and “cogent”. Evaluate arguments for strength



and cogency. *

**Basic Logical Concepts
and Skills (Essential
Topic):**

1.9 Explain
relationships between
logical concepts. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.1 Translate English
statements into
sentential logic and
vice versa. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.2 Identify the main
operators of complex
statements. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.3 Calculate the truth
value of a complex
statement based on the
truth values of its
component atomic
statements. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.4 Construct truth
tables for individual
complex statements and
use those to classify
statements as logically
true, logically false, or
contingent. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.5 Construct truth
tables for pairs of
complex statements and
use those to classify the
pairs as equivalent or
contradictory. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.6 Construct truth
tables for sets of
complex statements and
use those to classify the
sets as consistent or
inconsistent. *

☐☐☐

**Sentential/Propositional
Logic (Essential Topic):**

2.7 Construct truth
tables for arguments
and use those to
evaluate arguments for
validity. *

☐☐☐

Sentential/Propositional Logic (Essential Topic):
2.8 Construct derivations using direct proof techniques. *

☐☐☐

Sentential/Propositional Logic (Essential Topic):
2.9 Construct derivations using indirect proof techniques. *

☐☐☐

Sentential/Propositional Logic (Essential Topic):
2.10 Construct derivations using conditional proof techniques. *

☐☐☐

Sentential/Propositional Logic (Essential Topic):
2.11 Construct derivations to show an individual statement is logically true. *

☐☐☐

Predicate Logic (Alternate Topic):
3.1 Translate English statements into predicate logic and vice versa.

☐☐☐

Predicate Logic (Alternate Topic):
3.2 Construct derivations in predicate logic.

☐☐☐

Categorical Logic (Alternate Topic):
4.1 Identify the components of categorical propositions (quantifier, subject, copula, and predicate).

☐☐☐

Categorical Logic (Alternate Topic):
4.2 Identify the logical properties of categorical propositions (quality and quantity).

☐☐☐

Categorical Logic (Alternate Topic):
4.3 Formalize English statements as standard-form categorical propositions.

☐☐☐

Categorical Logic (Alternate Topic):
4.4 Apply contradiction, obversion, conversion, and contraposition to

☐☐☐

categorical propositions.

Categorical Logic
(Alternate Topic):

4.5 Use contradiction, obversion, conversion, and contraposition to evaluate the validity of immediate inferences.

☐☐☐

Categorical Logic
(Alternate Topic):

4.6 Draw Venn diagrams for categorical propositions.

☐☐☐

Categorical Logic
(Alternate Topic):

4.7 Use Venn diagrams to evaluate the validity of immediate inferences.

☐☐☐

Categorical Logic
(Alternate Topic):

4.8 Identify the components of categorical syllogisms (major term, minor term, and middle term).

☐☐☐

Categorical Logic
(Alternate Topic):

4.9 Put categorical syllogisms in standard form.

☐☐☐

Categorical Logic
(Alternate Topic):

4.10 Identify the mood and figure of categorical syllogisms.

☐☐☐

Categorical Logic
(Alternate Topic):

4.11 Use Venn diagrams to evaluate the validity of categorical syllogisms.

☐☐☐

Categorical Logic
(Alternate Topic):

4.12 Evaluate enthymemes and sorites.

☐☐☐

2. Comments:

3. Survey Completion

Thank you for completing this survey!